ments, or for the support of the lectures to ladies, or as Mr. Walter Morrison desires, for the improvement of the incomes of village schoolmasters?

Assuredly all these claims, and more, will be put in for the residue of the funds—and I think it will be more than half—which will remain unemployed when we have pulled down our old Universities and set up our German teaching establishments in their stead. And shall we be able to offer any resistance to such demands, unless we can come forward *now* with the courage of our opinions, and present the whole of our scheme for a scientific as well as a teaching organisation, the former on a no less complete scale than the latter, instead of keeping half of our scheme, and the more important half of it, in our pockets? Mr. Flower will remember the old lines:—

> "When land is gone and money spent
> Then learning is most excellent."

In conclusion, I would refer for a moment to Mr. Flower's fifth paragraph, in which he seems to say that the interruption of research and study by teaching work or by official duties, is rather an assistance to them. As this statement is very often made, but always without the addition of any reasons for the opinion, I would respectfully ask Mr. Flower to let us know why an interrupted employment is more likely to prosper than a continuous one? what is the precise advantage of distracting intellectual force from the work it has to accomplish? and why the members of the Government, or, say, the jury in the Tichborne case, should not also be compelled to deliver at least one course of lectures during the London season?

July 25 C. E. APPLETON

Method of Endowment

I HAVE read with much interest the three articles which have appeared in NATURE under the above title. The author of these articles has not as yet indicated the manner in which the object which he proposes is, in relation to the Universities, to be attained. He may intend to do this hereafter; but as the absence of any really practical scheme has been mentioned in the public journals as an objection in the way of such endowment as that proposed, I may perhaps be permitted to offer one or two suggestions on the matter. First, it appears certainly desirable that the Fellowships at the Universities should not be abolished, but that the conditions of their tenure should be changed. Scholarships of considerable value, and tenable for a limited number of years, might still be awarded after strict examination; but the Fellowships should be reserved exclusively for the recognition of a capacity for original research, proved by the publication of memoirs, or otherwise. Under such a system there would be little need for an Order of Intellectual Merit. The title of "University Fellow" might well suffice. I have used the expression "University Fellow," for though it would still be desirable that a certain proportion of the Fellows should be required to reside at the several colleges, yet it would probably be considered preferable that the power of election should be transferred from the colleges to a University Council. Such a Council would have to discharge a function similar to that annually performed by the Council of the Royal Society. To prevent favouritism and nepotism, it would be requisite that the names of all candidates should be published, together with the grounds on which each bases his candidature. Similarly the names of the selected candidates should be published, together with the reasons by which the Council have been influenced in their selection. But, it will probably be said, supposing that the Council have in their selection exercised a wise and unbiassed judgment, what is there to prevent the Fellowships from degenerating into mere sinecures? How is the continuance of original research to be secured? Probably there would be, in this respect, little danger in the case of those who have already proved their capacity for original work. But if it be contended that the danger is real, it would not be difficult to provide against it by granting Fellowships, not for life, but for ten or fifteen years, and by renewing them, on the expiry of the original term, only to those who have given strict proof of the continuance of their researches, making exception, of course, in the case of persons disqualified from work either by age or disease.

Such a scheme as that I have suggested would, I venture to think, be both practical and useful, though many matters of detail would still remain to be considered.

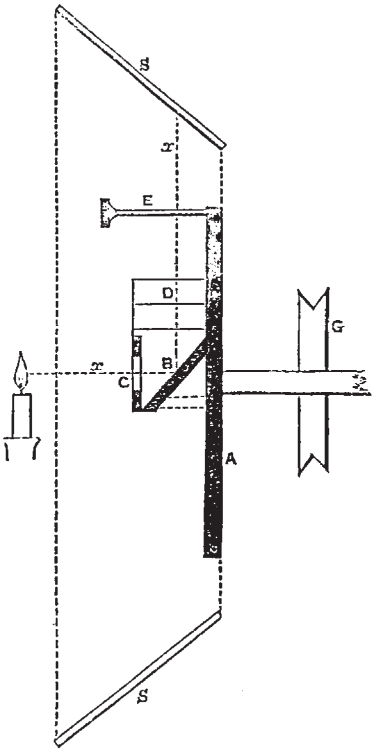
July 24 M. A.

Mechanical Combination of Colours

As you have kindly requested me to give a short account in NATURE of the instrument I designed to illustrate the "combination of colours," I have much pleasure in complying with your request. The instrument was designed to show the colour that resulted from the mixture of all or any of the colours of the spectrum given by any light. The construction is as follows:—

To the centre of a disc, A, which can be caused to revolve by the wheel G, a plain mirror, B, is fixed at an angle of 45° to the surface of the disc. In front of the mirror is placed a prism, D. At the edge of the disc there are placed different slides, E, for cutting off any particular rays; also, above the mirror, is a small slit cut in a piece of brass, C, to admit the ray under examination.

x x is a ray of light, which passing through the slit C, is deflected at right angles by the mirror B through the prism D, and is then received in the form of a spectrum upon the screen S S. As soon as the wheel G is set in motion the spectrum also moves round the conical screen S S, and when a certain velocity is arrived at, the colours combine and form the original coloured light which is entering at the slit C. In the same way, by using the slides, any two or more colours may be combined to form the resultant colour.



FREDERICK J. SMITH

On seeing the Red Flames on the Sun's Limb with a Common Telescope

ON observing the partial eclipse of the sun on Dec. 22, 1870, it occurred to me whether it might not be possible to see the red flames on the sun's limb without waiting for a total solar eclipse, or whether it was possible to make an artificial eclipse sufficiently perfect to admit of the red flames being seen. Accordingly I cut out several circular discs of thin brass (blackened on both sides), leaving three arms projecting from the periphery of each of such length that when the ends were bent they should slide into the tube of the eye-piece. I placed one such disc in the eye-tube as near to the field lens as possible to avoid its getting hot; but here a difficulty presented itself which I had not foreseen,—the disc was a trifle too large, and it shut out the sun altogether. I put in a smaller one which admitted too much of the sun's light. I afterwards tried several, and it required a considerable amount of filing and scraping to produce one just the right size to cover the sun's disc and no more; especially as the least jarring or vibration of the telescope would cause the edge of the sun to be seen first on one side and then on the other. After several trials at different times I succeeded on January 16, 1872, in seeing on the south-western limb a red flame. It appeared rather wider at the top than the bottom

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with a smaller one growing out from the bottom or root close to the sun's limb. There was another tongue of flame a little to the right, which appeared to be detached from the larger flame and also from the sun's limb.

On September 20, 1872, I saw a red flame which went up a little distance from the sun's limb and then divided in three. Close to this, on the edge of the sun's disc, was a group of nine small spots, and a large space was covered with faculæ. The flame—which was of a deep red colour—did not appear to be projected against the sky, but upon a very delicate purple background.

No coloured glass was used in either of these observations, but a sheet of letter paper was held between the eye and the telescope which was removed the instant the sun was brought into the centre of the field of view. R. LANGDON

The Huemul

IN the number of NATURE for July 24, p. 253, I see it is stated that "the Chilian Exploring Expedition has discovered a specimen of the Huemul, an animal that has been altogether lost sight of."

The late Earl of Derby received a female specimen of this animal from Port Famine, in the Straits of Magellan, described and figured by me in the Proc. Zool. Soc. 1849, p. 64, t. xii., as *Cervus leucotis*, which is now in the Derby Museum at Liverpool. Mr. Bates has sent to the British Museum a male and female of the Huemul, which were obtained by Don Enrique Simpson in a valley of the Cordilleras, lat. 46 S. These specimens have been described, the horns of the male figured, and the history of the animal given in detail by me, under the name of *Huamela leucotis*, in the Ann. and Mag. Nat. Hist. 1872, x. p. 445; 1873, xi. p. 214, and p. 308.

The animal, like all the American deer, differs from the stags of the Old World in having no tarsal gland.

British Museum, July 24 J. E. GRAY

Colour of the Emerald, &c.

IN the valuable and important paper given on this subject in NATURE (July 24), the writer has not made it quite clear what kind of emerald was experimented on.

Taken in conjunction with the beryl, it may be assumed that reference is intended to the green beryl, a silicate of alumina and glucina, commonly called emerald, from its colour; but the name of emerald is also applied to green varieties of corundum, which is crystalline alumina.

It would be interesting to understand fully the distinction of colour constituents.

July 25 A. H.

Parasites of the House Fly

SOME of your readers may not be aware that the common house fly is at this time frequently found with from one to twenty parasites on its body. To such I recommend the observation of them as an interesting microscopical study. They are usually on the under part of the fly and can be seen with an ordinary lens of high power. A. R.

Regent Street, July 23

Bees and Aphides

IN his interesting communication respecting the relations supposed to exist between *Trigona* and *Membracis*, Dr. H. Müller appears to have overlooked the Abbé Boisier's observation (Kirby and Spence, "Introduction to Entomology," 7th edition, p. 384) that hive-bees will collect the honey-dew excreted by Aphides. I have also observed the same habit in humble-bees.

Kilderry, Co. Donegal W. E. HART

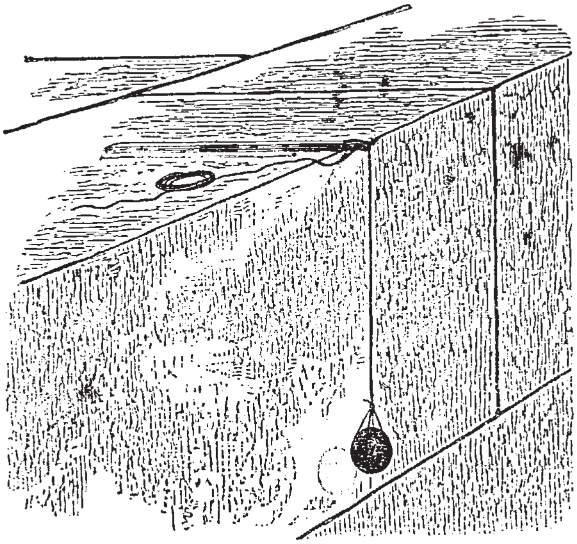
Flycatcher's Nest

SOME flycatchers have built their nest *inside* a temporary shed erected for the masons at present employed upon the rebuilding of Llanfrechfa Church. The nest is now full of young ones, and the old birds fly in and out of the shed with perfect confidence, carrying food to them, and quite regardless of the carving and sawing going on close to them.

July 16 ELIZABETH H. MITCHELL

Relics of the Pyramids

GLANCING over a number of your periodical I find depicted (vol. vii. p. 147) a grey granite ball, recently discovered in the Great Pyramid, and surmised to be an ancient Egyptian weight. It does not seem to have struck the author of the article that this ball could be anything else than a standard weight, but the description he gives leads me to assign to it quite a different use.



I believe it to be a naturally formed granite pebble, selected on account of its nearly spherical form, for a mason's "plumb-bob." The small white spots of lime found on the ball were probably the result of its impact against the narrow cement joints whilst the masonry was in progress and the mortar not yet set.

The bronze hook and cedar rod may have formed part of the same tool, which possibly resembled the accompanying sketch.

Mangalore, June 20 E. H. PRINGLE

FISH DISTINGUISHED BY THEIR ACTION

AS the trained eye of a constant resident in the country enables him to recognise the various species of birds that cross his path by their flight, irrespective of their form and colour, so the observer of fish as they wander at will in the tanks of a large aquarium soon learns to invest them with an additional marked individuality imparted by their mode of action. In some instances these distinctive characters are instructive, as illustrating the varied mechanical principles on which locomotion is effected, while in others they are highly valuable as affording accessory means of discriminating the zoological affinities of the different races and species.

Commencing with the Plagiostomous order, we find in the two primary sub-groups, including respectively the Sharks and Rays, that progression is effected on very distinct principles. With the *Selachoidea*, or shark tribe, the fish move by the even, powerful swaying from side to side of the largely developed and unsymmetrical caudal fin and whole posterior part of the body, the other fins remaining quiescent and being merely subservient as balancers. Descending to the species we find again that each form exhibits a peculiarity of action distinct from its congeners, and one which readily enables us to discriminate between them. Thus in the Smooth Hound, *Mustelus*, the pectoral fins are so largely developed that their balancing powers are highly augmented; comparatively slow motion of the caudal extremity suffices to propel the fish through the water, and the whole body being flexible, it pro-

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